

关于河流与绘画实践

On Rivers and Drawing Practice

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摘要

本文所述的笔者作品源于两个论题：一是场地和环境相互依存；二是理解“为什么”和“怎么做”是景观设计的基础和必要条件，并且以苏格兰裔美籍景观设计师伊恩·麦克哈格和苏格兰城市规划师帕特里克·盖迪斯的项目及研究成果为创作基础。尽管两人提出理论的年代相隔近半个世纪，但由于同样看重地域性知识对于当地设计和规划实践的重要作用，他们的实践主题和方法也秉持相似的准则。笔者近期的一项研究对比了对麦克哈格的研究成果颇有影响的两条河流——克莱德河和特拉华河。受这项研究的启发，本文展现了表达增量变化、叠加以及时间推移的横断面模型及相关绘图实践。文章首先讨论了地形图及其在美国、意大利和英国苏格兰的河流流域研究中的应用；随后，简要回顾了麦克哈格和盖迪斯对区域规划理论和实践的贡献；进而介绍了以横断面为基础的实践项目对于其他学科领域观察和分析景观现象的实用意义，相关结论亦成为了笔者近期一次基于拓印和数字绘图技术的展览的理论基础。文章最后重申了实地考察对景观设计和其他基于环境的创造性作品的重要意义。

关键词

流域；景观历史；横断面模型；持续性绘图实践；景观演变

ABSTRACT

This work flows from two propositions: sites and settings are interdependent, and understanding why and how is fundamental and inexhaustible for landscape architecture. It builds on the work of Scottish-American landscape architect Ian McHarg and Scottish town planner Patrick Geddes. Although separated in time by nearly half a century, their shared belief in the role of regional knowledge for local design and planning led to parallels in their canon relative to subject matter and approach. Prompted by a recent comparative study of two rivers influential to McHarg’s work—the Clyde and the Delaware—the essay reflects on transect modeling and related drawing practice that engage incremental change, accumulation, and time. It begins with a discussion of relief maps and their application to river basin research in the United States, Italy, and Scotland. This is followed by a brief retrospective on the contributions of McHarg and Geddes to regional planning theory and practice. The interdisciplinary usefulness of transect-based practice for observing and analyzing landscape phenomena is then presented, and provides context for a recent exhibition by the author, which explored both analog and digital drawing techniques. The essay concludes by reasserting the importance of field study to landscape architecture and other works of environmental imagination.

KEYWORDS

Drainage Basins; Landscape History; Transect Models; Durational Drawing Practices; Landscape Change

后续研究揭示出一项具有惊人一致性的共同主题。^[1]

1 源起

在英国爱丁堡的苏格兰国家图书馆中收藏有一张地形图，它展现了克莱德河源头的壮观景象（图1）。在陆军测量局（英国国家测绘机构）的指导下，这幅地形图于1859年绘制完成，描绘了在长达十年的马铃薯疫病结束三年后，南部高地部分地区的聚落情况。这张正北向的图纸涵盖了沿河约6.5km的范围。足够大的画幅将克莱德河两条奔腾的支流及分隔它们的山脊都囊括其中。这两条名为博特雷尔河和达尔河的支流共同为克莱德河提供源源不断的水流，克莱德河也正因它们的汹涌澎湃而得名^[2]。几块不规则地块拼凑出的几何图形构成了克莱德河狭长的洪泛平原，其中间或出现一片沼泽、沙地或混交林。图纸上，并行的双线与河道间的距离及角度不断变化，标识出农民和旅人的步行路线；沿途还标注了浅滩的位置，它们对于早期需要在河谷的高原沼泽和牧场间迁徙的牧民来说十分重要。已知的和关键的高程，均以常用的地形图样式标示在图中：如以利物浦平均海平面为基准、以英尺为单位的等高线，以及标注于建筑物、墙体、桥梁和石堆等基准点的高程。沿着主要铁路和公路以固定间距设置里程标，标注了往返常用目的地的距离。在整片陆地及整个图面中，数量众多的小型圈用地——羊圈、石头羊栏和圈舍被精心布置在浅谷边坡之上。

从16世纪开始，苏格兰景观的转变被整合记录在地图、文献资料和土地自身的结构之中。地形图（例如英国陆军测量局绘制的图纸）为追踪记录某些转变过程提供了有效的数据信息，并为更多的个人景观绘画实践提供了具有启发性的范例。

2 分支

笔者本人的苏格兰地形图发现之旅在一定程度上源于一项早期研究，这项研究探索了约翰·韦斯利·鲍威尔提出的州县联合体水资源治理方案在当代的重构^[3]。19世纪下半叶，鲍威尔在担任美国地质调查局局长期间组织撰写了《美国干旱地区土地调查报告》，对100° E以西土地的质量进行了评估^[4]。在美国，100° E经线可作为划分干湿地区的东西分界线；湿润地区能够获得充足的天然降雨以



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1. 拉纳克郡地图。克莱德河发源于苏格兰中西部拉纳克郡南部高原沼泽中一个被称为“汇水点”的地方。
1. Map of Lanarkshire. The River Clyde begins in West Central Scotland at a location known as Water Meetings in the moorlands of Southern Lanarkshire.

供给灌溉，而干旱地区则需要补充灌溉。基于对流域格局和当地聚落的细致研究，鲍威尔为解决干旱区问题提出了革命性的土地管理方法：一系列水文自治区聚集在一起，形成可以自行制定有关水资源治理决策的州县联合体。

在鲍威尔思想的感召下，笔者与罗布·福尔摩斯于2011年开展了一项协作研究，用于参与“旱地设计：改造美国西部”竞赛。研究计划绘制一系列解析性地图，以重新梳理与水资源基底同步扩张的美国政治版图变迁史。这意味着需要模糊掉美国现有50个州的州界，并依据主要河流的自然流域将土地重新划分为86个小区块。这项实践在国家尺度上展现了从水资源地理视角和人类聚落视角进行分区的差异。此外，团队还进行了档案研究，并在区域尺度上予以体现；同时也促成了其它活动的展开。于笔者个人而言，收获颇丰。收获之一就是让笔者有机会回溯并研究年少记忆中的两条河流，更为仔细地探索它们独特的演变史。其一是位于纽约和费城之间的什鲁斯伯里河，准确而言是一段向北延伸13km的河湾。河湾东侧如屏障般的半岛将其与大西洋隔离开来。什鲁斯伯里河最终汇入纽约斯塔顿岛南侧更广阔的拉瑞坦湾。向西奔流的拉瑞坦河汇水面积逾2 849km²，拥有丰富的生态多样性和历史典故。拉瑞坦河在下纽约湾与大西洋海岸线相连，成为精心规划的水路—铁路—高速公路交通网络的一部分，共同展现并推动该区域的自然与文化演变^[5]。笔者在拉瑞坦河流域的工作内容之一是观察和记录等距分布在同一条纬线上的七个观测点的景观。将

一个集体的横向演变历史叠加在这几个纵向的实体环境之上，从而戏剧化地呈现人和环境在此区域性景观中必然存在的相互依存关系（图2，3）。

鲍威尔在河流研究的大背景下，对当时的地形图进行了早期探索。1999年，笔者作为罗马美国学院的一名研究员，从意大利国家测绘机构军事地理研究所的档案调查资料着手，发起了一项针对萨尔诺河流域景观演变的研究（图4，5）。该研究采用了早期的线性徒步实验。这种类似于横断面绘制的田野调查方法鼓励研究者抛开审视景观时的通常习惯，思考人类活动与环境间极易被忽视的联系。此外，研究还利用沿固定路线采集的数据来观察记录土壤的变化（图6）。

克莱德河发源于苏格兰中西部拉纳克郡南部的高原沼泽，流经8个行政区，全长170km，是苏格兰第三长河。其源头与河口的高程差约472m（图7）。自洛瑟山开始，克莱德河流经了近3 367km²的荒野、耕地与城市，从埃尔文富特村向北直至卡斯泰尔斯交道口铁路社区，再在这里改道向西北方向缓缓流淌，共流经72km，高程下降仅不到30m。流至新拉纳克村附近的克莱德瀑布，河流骤然跌落75m，在18世纪后期为棉纺厂提供了充足的水力。之后，河流继续向西北奔涌，将克莱兹代尔地区的低地农田一分为二——这里曾经是马瑟韦尔镇的采掘和生产基地，后被重新规划为格拉斯哥、戈文和克莱德班克的码头，现在已经变为了格林诺克港中河道宽至42km的费斯湾。^[6]

2018年，在格拉斯哥艺术学院担任富布赖特研

究员期间，因好奇于克莱德河对苏格兰裔美籍景观设计伊安·麦克哈格作品的影响，笔者再次与这条河流建立起联系。麦克哈格因运用自然系统来进行区域规划的论著而闻名。他年轻时从位于大格拉斯哥地区的家乡克莱德班克镇出发，在对苏格兰乡村进行调研的过程中发现了自然的自我修复能力，并将其视为纾解19世纪末20世纪初城市工业化造成的城市病的良方。他从这些影响重大的经历中汲取灵感，写出了开创性著作《设计结合自然》，其中首次提出生态规划的概念，以及当代GIS和地理设计的基本方法。在引言部分，麦克哈格讲述了他反复进行徒步调研的经历——他曾向东前往格拉斯哥市，也曾向北探索坎普西山，通过徒步逐渐了解并熟悉了苏格兰的景观^[7]。多年以后，麦克哈格在1996年出版的自传《生命的探索》中，详实地记录了从克莱德谷地获得的灵感^[8]。

从麦克哈格的时代再倒退五十年，帕特里克·盖迪斯也认为城市和乡村是不可分割的。盖迪斯为区域规划理论的发展做出了独特的贡献^[9]，他不仅关注环境、经济活动与社区之间的相互作用（生态区域主义），还强调直观的景观观察对于公民教育的重要意义。生态区域主义注重与环境建立可持续的关系，培养人们对居住地（生态区域）的生态、经济与文化的认知，并为环境保护和发展相关的决策过程提供有力支撑。通常而言，生态区域总是围绕在流域（又被称为集水区和汇水区）周边。“解读城市的起源并阐明它们兴衰更迭的过程，”盖迪斯写道，“这样的探索不仅是合理且吸引人的，同时也是每一位公民学科研究者不可或缺的一课。”^[9]除了众多论著和规划项目，盖迪斯还在爱丁堡瞭望塔的建筑设计中具象化了他的公民赋权理念：他用建筑顶部一个真人大小的进光孔寓意“公民自我”，

将其下每一楼层赋予由爱丁堡当地到全球的尺度递进的主题，由此审视置于不同尺度中的“自我”。

盖迪斯对景观的知识和鉴赏不仅来源于书本，更扎根于实践，为他在生物学、社会学和城市规划领域的独到见解奠定了基础。麦多·麦克唐纳将盖迪斯的世界观及之后的城镇与区域规划理论与苏格兰的通才教育传统联系了起来——这里独特的启智环境强调直接观察对于鉴赏艺术与科学相互依存关系的重要性^[10]。根据麦克唐纳的说法，盖迪斯儿时的家可俯瞰泰河，这给他提供了观察乡村和城市中的自然系统和人造系统的机会和素材^[11]。诚然，随着时间的推移，同样的环境会引发有关身份、传承和公民责任的问题，而当时，盖迪斯用一句人生格言概括出了自己的应对方案：“vivendo discimus”（在生活中学习）。

无独有偶，麦克哈格的世界观也经历过大规模的重塑，这来源于他对于城市形态与当地资金支持之间联系的观察。可能是由于和盖迪斯、查尔斯·达尔文等先辈接受过同样的苏格兰通才教育，麦克哈格也将生态学作为了规划和设计的来源和指导思想。来自哈佛大学的科学家和哲学家劳伦斯·亨德森的著作对其产生了进一步的影响，亨德森的相互适应理论启发麦克哈格通过系统性地解析场地来揭示其“内在适应性”。

麦克哈格和盖迪斯都相信文化可以在景观构成中体现出来，并且也认为理解其秩序和演变对于设计师和公民来说都至关重要。因而，他们试图持续不断地通过大量的地图、草图等绘画实践来展现其复杂性，这也预示了之后他们对于利用横断面来理解景观演变的强烈热衷。麦克哈格对美国特拉华河流域的研究在这方面可谓是开创性的。该流域面积超过34 965km²，横跨特拉华州、新泽西州、纽约州

2. 《加里波第29号街和其他故事》展览作品——沿穿越新泽西州拉瑞坦河流域的某一纬线进行的横断面调查。纬线上7个观测点等距分布，对于其景观的文字描述被打印出来并依次陈列在相应的展示盒中。通过从横向和纵向两个角度来理解这些描述性文字，戏剧化地呈现了更大尺度的流域景观中场所和人类活动的相互依存关系。
3. 拉瑞坦河三联画。笔者在拉瑞坦河流域工作时期拍摄的景观。
4. 萨尔诺河流域的规划和概况。萨尔诺河流域位于意大利那不勒斯市以南48km处，是一个宽阔的谷地，西面以维苏威火山为界，东面以一片崎岖的山脉冲抵卡普里岛。这条河流发源于山泉，流经一系列控制和引导其水流的景观后向东南方向前进，最终汇入庞贝古城附近的那不勒斯湾。
5. 萨尔诺河流域地图。对于自然力量和人类劳动的痴迷吸引笔者关注萨尔诺河流域。自古以来，该水域为周围土地的集约化耕作提供了条件，维苏威火山喷发的火山物质则进一步滋养了这里的土壤。

2. 29 Garibaldi and Other Stories—A transect survey through New Jersey's Raritan River Basin along a single line of latitude. Text descriptions of the landscape at seven equidistant points were printed and placed in a sequence of corresponding boxes. Reading the text horizontally and vertically dramatized the interdependence of places and events within the larger river landscape.
3. Raritan Triptych. My work within the Raritan Basin included photographing its landscape.
4. Plan and profiles of the Sarno Valley. Located thirty miles south of Naples, Italy, the Sarno is a wide valley bounded on the west by Mount Vesuvius and to the east by a rugged spur of mountains terminating at the Isle of Capri. Originating in mountain springs, the river travels southeastward through a landscape of schemes to control and channel the water, joining the Bay of Naples near the ancient city of Pompeii.
5. Sarno: A fascination with natural forces and human labor drew me to the Sarno Basin. Since antiquity, its waters have enabled the intensive cultivation of surrounding lands, made especially fertile from volcanic material emitted by Mount Vesuvius.



分来源于以往的游牧经验，另一部分则来源于与其他牧民的交流。举例而言，若不了解河流流量的季节性变化，穿越河道就可能遇到困难，甚至危及生命。

在对地图和文字资料进行反复研究后，笔者所绘制的图纸从对河流沿线浅滩位置的单一记录，发展到试图捕捉其他各类过河节点的转变或消亡，如渡船、索道和桥梁等^[22]。记录范围也进一步扩大至发生景观演变的其他节点，例如支流的地理位置或河道跨越行政区边界的位置。数字化的分层制图方式使得作品可以逐层绘制后累加，或突出展示图纸上因信息叠加而自然生成的图案样式和密度。这种实践是一种揭示已知事物中潜在未知的探索方式；同时，也与麦克哈格用以辨别不同时空层次中景观现象之间的关系的方法相呼应（图11）。

秉持这种态度，笔者的第二次绘图实践选取了与美国特拉华河有关的主题，这条河流也对麦克哈格的生活与实践具有深刻的影响。尽管克莱德河和特拉华河的坡降不同，但两者落差相当，从发源地到河口均下降了472m。这个发现促使笔者将两条河流的横断面图相互叠加，同时也激发了关于除印刷品外还有哪些其他“便携”载体的思考（图12）。该作品的最终版本以纸张和画布的形式共同呈现，其色彩源于图纸上734个采样点的实景照片（图13）。为了再次突出城市和地区间的相互依存关

系，这幅图纸还有意引导观者从多个角度对其进行解读。

4 流变

在新泽西州罗格斯大学的齐默里美国艺术博物馆中，另一种地貌的表现方式有助于在时间和空间上组织各项事件。19世纪的光色派画家约翰·弗雷德里克·肯塞特在其绘画中描绘了什鲁斯伯里河平静的河口与沿海高地树木繁茂的海岬。肯塞特因长岛附近海景的画作而广为人知，在稀松平常的地貌景观中，在熠熠光芒和宁静的表面下，他发掘出了自然的超然品质^[23]。

在探究麦克哈格和盖迪斯为景观可视化做出的开创性贡献时，笔者又开启了关于激发两人创作灵感的“场所和环境的本质”的思考：包括实地考察对于产生环境意识的重要意义，感官在人与周围环境产生联系时扮演的角色，以及绘图训练对于帮助人们察觉并欣赏已经存在的事物的促进作用。肯塞特在这样一个简约而不简单的地方所进行的随意创作，给笔者的探索之旅带来了新的启发。

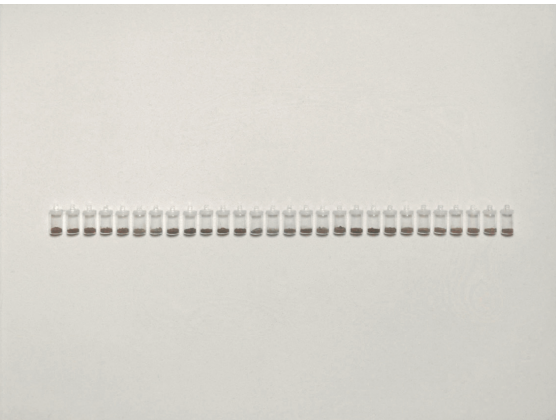
别处的另一间画廊中展览着理查德·塞拉早期的绘画作品，展现了他对于重量和重力、空间和尺度、形状和形式之间关系的探索；让人们联想到塞拉及其同期艺术家对于所用材料本质（无论是局限性还是

潜力）的探寻。虽然借助材料本身的性质以在某种程度上决定作品的形式已不是一种突破常规的表现方法，但对笔者而言仍然值得一试。**LAF**

致谢

感谢格拉斯哥城市实验室、格拉斯哥艺术学院高级纺织品中心和J·D·凯利印刷工作室对于笔者作品的最终呈现所给予的帮助。

- 6. 《40° 30'》展览作品。用于识别景观在不同环境梯度下模式与变化的横断面调查，可以涵盖一系列狭长的剖面，例如萨尔诺流域内28个1km长的步道。
- 7. 克莱德河和费斯湾区域的规划图和剖面图。19世纪苏格兰制图员和雕刻师约翰·巴托洛姆因开创性地使用按高程分层设色的方法制图而广受赞誉——这是一种以色带表示地图高程的分层设色方案，如此张克莱德河图纸所示。
- 6. 40° 30'. Transect surveys, useful for detecting patterns and measuring change along environmental gradients, can include narrow sections, such as this series of 28 one-kilometer walks within the Sarno Basin.
- 7. Plan and section of River Clyde and Firth. John Bartholomew, 19th century Scottish cartographer and engraver, is credited with pioneering the use of hypsometric tints, or layer tinting—the system of representing map elevations with bands of color in a graduated scheme, as shown in this representation of the River Clyde.



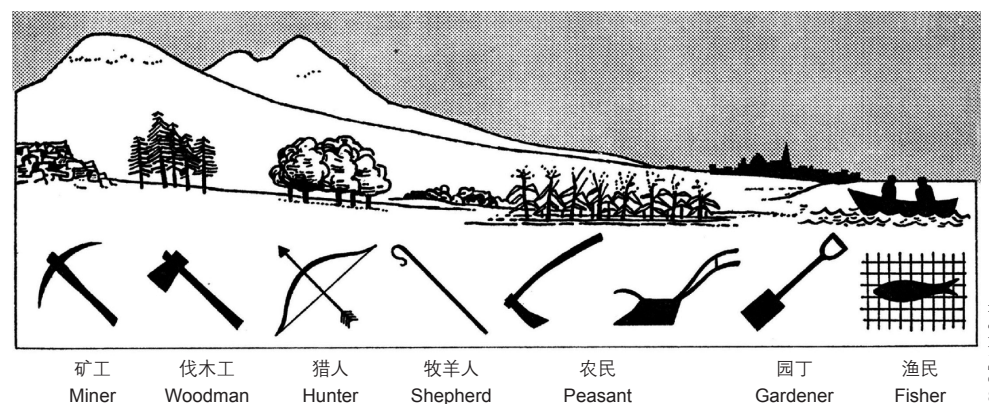
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8. 对应基本职业类型的河谷横断面图。横断面研究深受苏格兰通才教育传统的影响。盖迪斯标志性的“河谷横断面图”展现了人们利用当地自然环境开展一系列生产生活活动的情境，以此阐明人类对于景观演变的适应性。

8. The *Valley Section* with basic occupations. Transect studies have a deep Scottish heritage. Geddes' iconic "Valley Section" illuminated human adaptations relative to landscape change by situating a series of activities as responses to opportunities afforded by a region's natural components and conditions.



Hindsight discerns a common theme, astonishingly consistent.^[1]

1 Headwaters

In the National Library of Scotland in Edinburgh, there is a magnificent representation of the headwaters of the River Clyde in the form of a relief map (Fig. 1). Created in 1859 under the direction of Ordnance Survey, the national mapping agency for the United Kingdom, the drawing depicts the extent of settlement in a portion of the Southern Highlands three years after the end of a decade-long potato blight. The map view, down river with north to the top, stretches roughly four miles, sufficient to capture the *rig* or ridge, separating the Potrail and Daer Waters—the pair of “strong” tributaries from which the river derives its name and its flow^[2]. Occupying its slender floodplain is a geometry of irregular plots, occasionally interrupted by an isolated patch of marsh or sand or mixed wood. At varying intervals and angles to its channel, pairs of parallel lines indicate the routes of paths used by farmers and travelers, and the locations of fords treasured by early drovers in need of moving livestock within and across the valley’s upland moors and pastures. Elevations, where known and critical, are indicated in the styles of relief representation common for the day: as lines in feet above mean level sea in Liverpool or bench mark points on buildings, walls, bridges,

and cairns. Milestones, labeled with distances to and from customary destinations, appear at fixed intervals along principal railways and roads. Across the land and throughout the image, a scattering of small enclosures—sheepfolds, sheep rees, and shelters—mark the slopes of shallow vales; carefully positioned and numerous.

Onward from the 16th century, transformations to the Scottish landscape were organized and recorded in maps, written documents, and in the structure of the land itself. Relief representations, such as Ordnance Survey maps, provide useful data for tracing some of this change and inspiring examples for more personal landscape drawing practices.

2 Branches

My own journey of discovery with Scottish relief maps began in part with an earlier study that explored a contemporary reformulation of John Wesley Powell’s water commonwealth proposal for the management of water resources^[3]. In the late 19th century, while serving as director of the United States Geological Survey, Powell authored the “Report on the Lands of the Arid Region of the United States,” which assessed the quality of lands west of the 100th meridian^[4]. In the United States, the 100th meridian demarcates the east-west boundary between humid and arid lands; those

that naturally receive sufficient rainfall for agriculture and those that require supplemental irrigation. Powell’s revolutionary approach to the management of arid lands, based on a close reading of drainage patterns and indigenous settlement, urged the creation of a system of self-governing hydrographic districts, or commonwealths, empowered to make decisions regarding water resources.

Using Powell’s call to action as a starting point, a collaborative study developed with Rob Holmes for the 2011 Drylands Design: Competition for Retrofitting the American West involved the creation of a series of speculative maps realigning the political landscape of the United States co-extensive with its water resource base. This entailed “erasing” the boundaries of the existing fifty states and redistricting the land as a network of eighty-six smaller territories corresponding to the natural drainage areas of major rivers. In addition to illuminating conflicts between the resource geography of water and human settlement at the national scale, this exercise also engaged archival research and reflection at the regional scale; activities that provided different rewards. One of these was the opportunity to return to two rivers of my youth—the Shrewsbury and the Raritan—and to study their distinctive settlement histories more closely. Situated roughly mid-way between New York and Philadelphia, the Shrewsbury River is an eight-

mile northward-running estuary, protected on its eastern side from the Atlantic Ocean by a barrier peninsula. The river joins the larger westward flowing Raritan south of New York's Staten Island. Draining more than 1,100 square miles, the Raritan Basin is rich in ecological variety and historic incident. Accessible to the Atlantic coastline at Lower New York Bay, the river formed the backbone of an elaborate network of water, rail, and highway routes, which enabled and epitomized the region's natural and cultural evolution^[5]. My work within the Raritan Basin included reading and recording its landscape at seven equidistant points along a single line of latitude. Superimposing a collective horizontal "story" across multiple vertical ones dramatized the imperative interdependence of people and conditions within this regional landscape (Fig. 2, 3).

The Powell study followed an earlier exploration using period relief maps in the context of river research. In 1999, while a fellow at the American Academy in Rome, I initiated a study of landscape transformations within the Sarno Basin utilizing archival surveys from the Istituto Geografico Militare Italiano, the Italian official National Mapping Agency (Fig. 4, 5). This investigation included some initial experiments in line walking, a fieldwork method similar to transect mapping which encourages the setting aside of usual habits of reading a landscape and wondering about connections between events and conditions one

might otherwise consider as disconnected or unrelated. The study employed a fixed linear datum against which variations in soil were observed and recorded (Fig. 6).

Rising in the moorlands of Southern Lanarkshire in West Central Scotland, the Clyde is the country's third longest river, flowing 106 miles through eight council districts, and descending roughly 1,550 feet from headwaters to estuary (Fig. 7). Originating in the Lowther Hills, the river drains nearly 1,300 square miles of wild, cultivated, and urban land, traveling north from Elvanfoot to Carstairs Junction, where it changes course and winds gently northwest, falling less than 100 feet in 45 miles. At the Falls of Clyde, in the vicinity of New Lanark, the river drops 250 feet, and provided waterpower for late-18th century cotton mills. Continuing northwestward, the river bisects the cultivated lowlands of Clydesdale, former sites of extraction and production in Motherwell, and the repurposed quays of Glasgow, Govan, and Clydebank, before widening to a distance of 26 miles to form the Firth at Greenock.^[6]

My relationship with this river is newfound, beginning in 2018 while serving as a Fulbright fellow at The Glasgow School of Art and originating from a curiosity about its influence on the work of Scottish-American landscape architect Ian McHarg. Renown for his writings on regional planning using natural systems, as a youth, McHarg explored the Scottish countryside setting out from his Clydebank home in Greater

Glasgow, discovering the restorative powers of nature as a remedy to effects of late-19th and early-20th century urban industrialization. He drew from these formative experiences to produce his seminal book *Design With Nature*, which pioneered the concept of ecological planning, and set forth the foundational method for contemporary GIS and geodesign. In its introduction, McHarg describes a repetitive walking practice through which he gradually came to know and understand the Scottish landscape, including eastward walks into Glasgow and northerly ones into the Campsie Fells^[7]. Years later, McHarg further documented the inspiration of the Clyde Valley Region in his 1996 autobiography *A Quest for Life*^[8].

Writing fifty years earlier, Patrick Geddes also saw city and countryside as intertwined. His distinctive contribution to the development of regional planning theory^[9] not only stressed interactions between the environment, economic activity, and community (bioregionalism), but the importance of first-hand landscape observation in the education of citizens. Bioregionalism emphasizes the creation of sustainable relationships with the environment, building awareness of the ecology, economy, and culture of the place where one lives (bioregion), and committing to decision-making processes that conserves and enhances it. Often, bioregions are organized around drainage basins (also called catchments or watersheds). "Deciphering the origins of cities and unraveling their

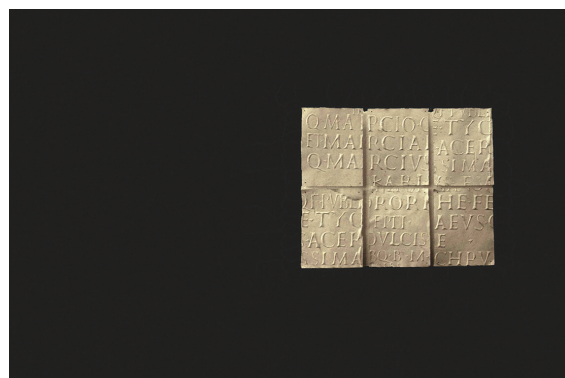


9. 《岁月之书》展览，展于宾夕法尼亚大学亚瑟罗斯画廊。本次展览的作品于2019年春夏两季展出，通过数码绘图、野外摄影、蚀刻、雕刻、浮雕等多种展示方式，探究递增和叠加的艺术。

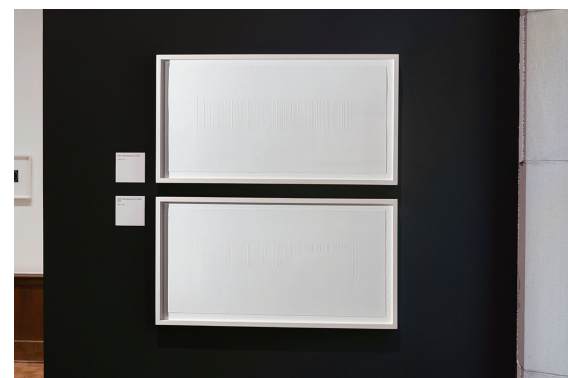
9. *A Book of Days*, Arthur Ross Gallery, University of Pennsylvania. Works comprising this exhibition, mounted in the spring and summer of 2019, were produced through a combination of digital drawing, field photography, etching, engraving, and embossing, and explored ideas of increment and accumulation.

10. 《庭院》展览作品。这组拓印作品记录了庭院中一组石块碎片的表面雕刻。
11. 克莱德河拓印图。为无法移动的物体——沿克莱德河分布的过河节点——复刻的便携式版本。

10. *Cortile*. This group of "squeezes" was made from an inscribed stone fragment that was found in a courtyard.
11. Clyde River Squeeze. A portable version of something otherwise immovable: the locations of crossings along the fall and reach of the River Clyde.



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evolution and life-processes,” wrote Geddes, “are not only legitimate and attractive inquiries, but indispensable ones for every student of Civics.”^[9] In addition to his numerous works and plans, Geddes materialized his conviction to citizen empowerment in the architecture of Edinburgh’s Outlook Tower; a life-size aperture that contextualized “the civic-self” within a series of increasingly scaled spatial relationships, from the local to the global.

Geddes’ cultivated knowledge and appreciation of landscape came by way of both library and field; two settings which proved foundational to his views on Biology, Sociology, and town planning. Murdo Macdonald links Geddes’ worldview and subsequent theories on town and regional planning to Scottish generalist traditions; a distinctive intellectual context, which emphasized direct observation in the appreciation of interdependencies between art and science^[10]. According to Macdonald, Geddes’ boyhood home overlooking the River Tay, provided both prospects and data for observing the natural and constructed systems of countryside and city^[11]. These same surroundings, in time, would provoke questions of identity, heritage, and civic responsibility, which Geddes provisionally answered and summarized in his life motto: *vivendo discimus*—by living we learn.

Similarly, McHarg’s worldview was also largely shaped by observations of the interplay

between the tangibility of cities and the endowments of their regions. His embrace of Ecology as source and guide for planning and design may owe itself to Scottish generalist traditions like Geddes or Charles Darwin. Further influences might be the writings of Harvard scientist and philosopher Lawrence Henderson, whose theory of mutual adaptation inspired McHarg’s belief in the methodical reading of a place as a means to reveal its “intrinsic suitabilities.”

Both McHarg and Geddes believed culture revealed itself in the configurations of landscape, and that understanding the order and evolution of these configurations was fundamental for designers and citizens alike. Each, in turn, endeavored to reveal these complexities through a multitude of durational drawing practices, including mapping and sketching; foreshadowing their fascination with the use of transects to understand landscape change. McHarg’s studies within the Delaware River Basin proved seminal in this regard. Encompassing more than 13,500 square miles across four states in the United States (Delaware, New Jersey, New York and Pennsylvania), the basin is a complex, ecologically diverse system. More than five percent of the United States population relies on the river for their drinking water, including residents of Philadelphia and half the population of New York City.^[12]

Transect mapping is a form of scientific

sampling used to study landscapes in flux and to detect patterns and change along environmental gradients. Guided by a fixed path, observers collect samples or count the occurrence of specific phenomena at select intervals. The interdisciplinary usefulness of transect-based analysis extends broadly, including Biology, Ecology, and Archaeology, to name a few. Andrés Duany and Emily Talen have extensively discussed the evolution, application, and value of transect mapping in design and planning^[13]. Many contemporary landscape architects, architects, and city planners use tactical variations of transect or sectional analysis for revealing patterns or arraying changes in density or type. In his 1957 essay “The Stranger’s Path,” landscape historian John Brinckerhoffs Jackson used a modified version of transect mapping to juxtapose his insights with the generic components of a Western town^[14]. English architect Gordon Cullen advocated a similar approach—serial vision—as a means of comprehending and communicating the sequential experience of urban spaces to viewers in motion^[15]. In his book *Real Places*, Grady Clay described the value of the cross-section method to his study of American cities^[16]. More recently, Catherine Ward Thompson^[17] reminded us that transect studies have a deep Scottish heritage, including Geddes’ iconic “Valley Section,” which illuminated human adaptations relative



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12. 对双重横断面图进行印刷研究。将克莱德河和特拉华河的横断面图相叠加，引发了对其他印刷模式和包括纺织品在内的替代材料的探索。
13. 双重横断面图。从734个采样点的实景照片中提取色彩为线条着色。
12. Printing study for Dual Transect. Superimposing the Clyde and Delaware River transects led to an exploration of alternative printing modes and materials, including textile.
13. Dual Transect. Line colorations drawn from sampled field photography 734 study locations.

to landscape change by situating a series of activities as responses to opportunities afforded by a region's natural components and conditions (Fig. 8). Another legacy of this work is a recognition of the power of drawing to reconfigure the environment both physically and conceptually, meaning that drawings as representations of landscape contain material that is directly visible and it is through this

material that other material is suggested or implied.

3 Confluence

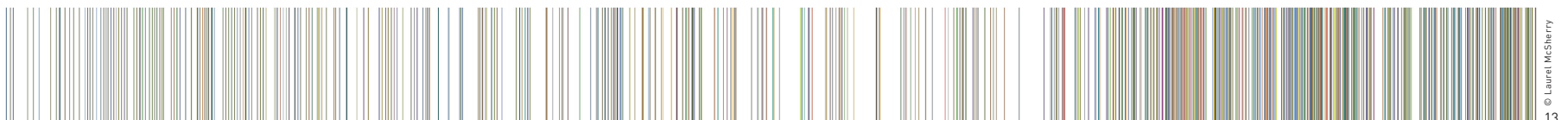
As one of the largest libraries in the United Kingdom, the National Library of Scotland is a vast repository of material pertaining to the country's knowledge, history, and culture. Its cartographic collection, the largest in Scotland, contains over two million items dating between 1560 and 1970, including county, military and estate maps, town and railway plans, and coastal charts, which depict the changing Scottish landscape over time. Its collection of Ordnance Surveys published from 1841 to 1991 includes original and printed sheet maps as well as high-resolution digitized color images. Their online split-screen viewer also enables the comparison of selected georeferenced maps to each other as well as to contemporary map or satellite layers. It was through the work of these mapmakers that I first came to know something of the Clyde landscape, and formulate questions about its evolution, which were enhanced by other drawn and written works, including those of Scottish engineer William Miller and rural social historian Archibald Richard Burdon Haldane, and came to influence my recent drawing practices^{[18]-[21]}.

There is no Landscape Architecture program at The Glasgow School of Art, and so selecting it as the location for my Fulbright fellowship was something of a provocation; an opportunity to join a community of artists, to learn something of their practices, and to reflect on and expand my own. A group of works (Fig. 9), which form part of the exhibition *A Book of Days*, explore

ideas of increment and accumulation, and were produced through a combination of digital drawing, field photography, etching, engraving, and embossing. Mounted at the Arthur Ross Gallery at the University of Pennsylvania in the spring and summer of 2019, *A Book of Days* was one of three exhibitions featured at the Design With Nature Now conference to mark the 50th anniversary of the publication of McHarg's groundbreaking book.

Inspired by a process used in the field by archaeologists to create paper impressions of inscribed surfaces (Fig. 10), this group of works began with a desire to similarly create a portable version of something otherwise immovable: the locations of fords along the River Clyde. In Scotland, as in other once largely pastoral communities, the breeding and movement of livestock—between grazing areas or to distant markets—was fundamental to life and can be traced back as far as records exist. While over time lowland areas within the Clyde Valley suitable for crops gave way to cultivation, within upland hills and valleys, the grazing of stock remained a mainstay. Historically, in the absence of maps, a drover's knowledge of these lands needed to be both extensive and intimate; gained partly from the experience of former journeys and partly from conversing with other drovers. Seasonal changes to river flows could make them crossing difficultly or deadly.

Working iteratively between the maps and texts, my drawing evolved from a record of ford locations along the river's fall and reach to one that included other types of crossings, such as floats, ropeways, and bridges, in attempts to capture their transformation or disappearance^[22]. Gradually, this intention



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expanded even further to encompass other sites of landscape change, such as the locations of tributaries or the transgression of jurisdictional boundaries. Drawing digitally in discrete layers provided the freedom to work both incrementally and cumulatively, and to attend to patterns and densities resulting from their simultaneous display. The practice became one of discovery—revealing the latent within the known; echoing the approach used by McHarg to discern relationships between landscape phenomena in spatial layers and temporal profiles (Fig. 11).

In this spirit, a second drawing was undertaken using subject matter pertaining to the Delaware River in the United States, which was also influential to McHarg’s life and practice. Although the gradients of the Clyde and the Delaware differ, the rivers share the same fall, descending 1,550 feet from source to mouth. Discovering this led to the superimposition of the two transect drawings and a reconsideration of “portability” beyond the products of a printing press (Fig. 12). The final version of the work, realized on both paper and fabric, owes its coloration to field photography sampled from each of the drawing’s 734 locations (Fig. 13). To reinforce the interdependencies of cities and regions, the drawing is intentionally multi-directional in its reading.

4 Flow

Within the Zimmerli Collection of American Art at New Jersey’s Rutgers University, another type of relief representation helps order events in space and time. The painting by 19th century luminist John Frederick Kensett depicts the calm, flat estuary of the Shrewsbury River juxtaposed by the wooded promontory of a coastal highland. Widely known for his painted seascapes of nearby Long Island, Kensett explored the transcendental qualities of nature

present in radiant light, serene surfaces, and less dramatic topography^[23].

Deciphering the pioneering contributions of McHarg and Geddes to landscape visualization raises interesting questions about the nature of the places and the circumstances that inspired their work. Among these is the importance of field study to environmental awareness, the role of the senses connecting us with our surroundings, and drawing as a nurturing practice to help us see and appreciate what is already there. Kensett’s spare composition of a simultaneously ordinary and extraordinary place provides another touchstone in my journey.

Elsewhere, in another gallery, an exhibition of early drawings by Richard Serra explored weight and gravity, space and scale, shape and form; and evoked other images of what he and fellow artists of his time were questioning: the essence of the material they were working with—its limits and its potentials. Although no longer radical, letting the nature of a material in some way dictate the form of the work remains for me a powerful idea. **LAF**

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REFERENCES

[1] McHarg, I. (1969). *Design with Nature* (p. 2). New York, NY: Doubleday & Company, Inc.

[2] King, J. (2020, February 28). *River Clyde ~ Abhainn Chluaidh*. Retrieved from <https://www.ainmean-aite.scot/river-clyde-abhainn-chluaidh/>

[3] McSherry, L. (2013). A Revised Blueprint for a Dryland Democracy. *Space, Place, Time, Duration: Proceedings of the 2013 Council of Educators in Landscape Architecture Conference*. Austin: University of Texas.

[4] Powell, J. W. (1879). *Report on the Lands of the Arid Region of the United States with a More Detailed Account of the Land of Utah with Maps*. Washington, DC: United States Government Printing Office. <https://doi.org/10.3133/70039240>

[5] Cranmer, H. J. (1964). *New Jersey in the Automobile Age: A History of Transportation* (p. 41). Princeton, NJ: D. Van Nostrand Company, Inc.

[6] History. (n.d.). *Clyde Waterfront*. Retrieved from <http://www.clydewaterfront.com/clyde-heritage/river-clyde/history-of-the-river-clyde>

[7] McHarg, I. (1969). *Design with Nature* (p. 4). New York, NY: Doubleday & Company, Inc.

[8] McHarg, I. (1996). *A Quest for Life: An Autobiography*. New York, NY: John Wiley & Sons.

[9] Geddes, P. (1915). *Cities in Evolution* (p. 2). London, England: William & Norgate.

[10] Macdonald, M. (2009, May 20). Patrick Geddes and the Scottish Generalist Tradition. *Sir Patrick Geddes Commonwealth Lecture*. Edinburgh, Scotland: Royal Society of Edinburgh.

[11] Macdonald, M. (2016). Patrick Geddes and Perth. In F. Purdie (Ed.), *A Botanist Looks at the World*. Perth, Scotland: Fergus Purdie Architects.

[12] William Penn Foundation. (2014). *The Delaware River Watershed Initiative*. Retrieved from: <https://williampennfoundation.org/delaware-river-watershed-initiative>

[13] Duany, A., & Talen, E. (2002). Transect Planning. *Journal of the American Planning Association*, 68(3), 245-266. <https://doi.org/10.1080/01944360208976271>

[14] Jackson, J. B., & Zube, E. (Eds.). (1979). *Landscapes: Select Writings of J. B. Jackson*. Amherst, MA: University of Massachusetts Press.

[15] Cullen, G. (1961). *Townscape*. New York, NY: Reinhold Publishing Corporations.

[16] Clay, G. (1998). *Real Places: An Unconventional Guide to America’s Generic Landscape*. Chicago, IL: University of Chicago Press.

[17] Thompson, C. W. (2006). Patrick Geddes and the Edinburgh Zoological Garden: Expressing Universal Processes Through Local Place. *Landscape Journal*, 25(1), 80-93. doi:10.3368/lj.25.1.80

[18] Millar, W. J. (1888). *The Clyde: From Its Source to the Sea, Its Development as a Navigable River, the Rise and Progress of Marine Engineering and Shipbuilding on Its Banks, and the Leading Historical, Geological, and Meteorological Features of the Clyde Valley*. London, England: Blackie & Son.

[19] Haldane, A. R. B. (1952). *The Drove Roads of Scotland*. Edinburgh, Scotland: Birlinn Limited.

[20] Haldane, A. R. B. (1962). *New Ways through the Glens: Highland Road, Bridge and Canal Makers of the Early 19th Century*. Newton Abbot, England: David & Charles.

[21] Haldane, A. R. B. (1971). *Three Centuries of Scottish Posts: An Historical Survey to 1836*. Edinburgh, Scotland: Edinburgh University Press.

[22] Reid, T. (1913). Fords, Ferries, Floats, and Bridges Near Lanark. *Proceedings of the Society of Antiquaries of Scotland*, 47(1), 209-256. Retrieved from <http://journals.socantscot.org/index.php/psas/article/view/7288>

[23] Avery, K. (2004). *The Hudson River School*. Retrieved from http://www.metmuseum.org/toah/hd/hurs/hd_hurs.htm

[24] Close, R., Gifford, J., & Walker, F. A. (2016). *The Buildings of Scotland: Lanarkshire and Renfrewshire*. New Haven, CT: Yale University Press.

[25] Objects of Attention. (2003). In C. Spellman (Ed.), *Re-envisioning Landscape / Architecture* (pp. 50-57). Barcelona, Spain: Actar.

[26] The Ecology of Memory. (2002). *Landscapes of Water: History, Innovation and Sustainable Design Vol. II* (pp. 563-568). Bari, Italy: Uniongrafica Corcelli Editrice.

[27] Whittow, J. B. (1977). *Geology and Scenery in Scotland*. Bungay, England: The Chaucer Press.